

## A NEW THEORY OF POLYNESIAN ORIGINS.

BY ROLAND B. DIXON, PH.D.

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The problem of the origin and racial affiliations of the Polynesian peoples has engaged the attention of anthropologists for many years. Struck by their contrast with the black-skinned and lower cultured populations of Melanesia and Australia, even the earlier explorers began to speculate as to the provenance of this attractive and interesting people, and suggestions of an affiliation with the Malayan peoples of Indonesia were soon made. The recognition of the linguistic relationship of the various Polynesian languages to the Malay helped greatly to strengthen this view, and when the Micronesian and many of the Melanesian languages were also found to belong to the Malayo-Polynesian family, the foundations of the current theory of Polynesian origins were laid. This theory accounts for the Polynesian people as a branch of the Malay which, breaking away from the parent stock, migrated eastward through Melanesia to the islands further out in the Pacific. The study of the physical types among the Polynesians and of their culture seemed to fortify this general conception. Such Melanesian features as were recognized came to be regarded as due to acculturation and mixture with Melanesian peoples in the course of the eastward migration, for the Polynesians were usually held to have been the first occupants of the islands in which they were found. The hypothesis of an earlier stratum of Melanesians throughout the Polynesian area was indeed advanced, but in general met with little approval.

As further studies were made on the physical side, it began to be seen that the Polynesians were really far from being a uniform type. The presence of several types was recognized, and various explanations offered to account for the diversity. Some regarded

these differences as due to social and economic causes, others as the result of different waves of immigrants. For the most part the investigators confined their attention to portions of the field only, studying the Hawaiians or the Maori for example, rather than including all of the Polynesian peoples; and largely relied, furthermore, on averages of measurements and indices for their results. In consequence the situation remained obscure, correlation between different portions of the Polynesian area, and between it and the rest of Oceania was difficult, and while the whole problem was seen to be growing in complexity, no satisfactory general theory was possible.

Having for many years been greatly interested in the whole question of the origins and development of the Oceanic peoples, and having on the basis of existing data, attempted most unsatisfactorily to explain the whole matter to students, the author finally came to the conclusion that only by a revision and reinvestigation of all available data, on somewhat different lines, could the muddle be cleared up. Accordingly, all accessible measurements, not only of Polynesians but of all the people of Oceania together with those of southeastern Asia, were gathered together and analyzed on what, at least for this area, was a novel plan. The final results of the whole study are not yet complete, but the analysis of the Polynesian data has led to such unexpected and interesting, yet at the same time logical and coherent results, that their brief presentation seemed desirable.

Before outlining the conclusions reached, a few words must be said as to the method employed. For the most part in previous studies, attention has been mainly directed to the cephalic index, or if other indices and measurements were considered, little or no attempt was made to study the correlation of these indices in individual skulls. In the present investigation, a correlation was made for the cephalic, length-height and nasal indices, with the addition of the facial index where it was available. Thus the accessible series of Hawaiian crania was analyzed into groups, one comprising all skulls that were for instance Dolichocephalic and at the same time Hypsicephalic and Platyrrhine, another including all that were

Brachycephalic, Hypsicephalic and Platyrrhine; or Mesocephalic, Orthocephalic and Leptorrhine, etc. The assumption was then made (and it was in the beginning a pure assumption) that those groups whose indices were all extremes either at one end or the other of their several series, constituted primitive or fundamental types; while those having one or more of their indices medial in value, were the results of the crossing or blending of the fundamental types. Thus the Dolichocephalic, Hypsicephalic, Platyrrhine group was a fundamental or primitive one, for all three of the indices correlated lay at one extreme or the other of their series; while the Mesocephalic, Orthocephalic, Mesorrhine group (to take the most pronounced example) would be regarded as a blend or derivative type, since its indices in every case, lay half way between the extremes of their series.

The relative proportions of these various fundamental and derived or blended types were then calculated for all of the different island groups in Polynesia—and at once results of much interest became apparent. For in one portion of Polynesia one fundamental type was seen to be dominant, while in another a different one assumed the leading place, and the blends or derived types in each area were found to be clearly explicable as resulting from the fusion of just those fundamental types which were actually present, or whose former presence could logically be assumed. The complexity of the Polynesian population was thus confirmed, but in place of the previous confusion, a rather remarkable degree of order was found to exist, while at the same time the causes of the complexity were revealed in the fusion of the fundamental types present in varying proportions in different parts of the Polynesian area. When, moreover, the same methods of analysis were applied to the data from Melanesia, Micronesia, Australia and Indonesia, and carried on into the eastern portion of the Asiatic continent, it was found that these same fundamental types and their derivatives and no others, made up the population of the vast majority of the population of this whole great area, although the different elements were combined in very different proportions in the various parts of the field. By viewing the problem whole in this way, the conviction

grew that the racial history of the Oceanic area could be logically and satisfactorily explained by a series of waves of fundamental or derived types spreading from west to east throughout the whole area. The theory of a series of successive waves bringing different physical types into Oceania is, of course in no sense new, the novelty of the present results lies in the character and ultimate affiliations of the fundamental types assumed.

We may now turn to the outcome of this present study, so far as it relates to Polynesia. The underlying and probably historically the oldest of the fundamental types in Polynesia is one which, so far as crania alone are concerned, is practically identical with that of the Negrito. This result was so unexpected that at first it was believed that some error had been made; for that a relatively fair, tall people such as the Polynesians, with normally wavy hair, should comprise a substantial factor comparable with the dwarfish, black-skinned and woolly-haired aborigines of the Philippines and the Malay Peninsula, seemed most improbable. Further examination, however, showed that not only was the Brachycephalic, Hypsicephalic, Platyrrhine group in Polynesia the exact equivalent of that which characterized the Negrito in the three correlated indices together with the facial index, but also in the absolute measurements of the head, face and nose as well as in capacity. The identification, therefore, had to be accepted. The geographical distribution of this Negrito type as it may tentatively be called, is significant, but at the same time puzzling, for it survives in any strength only in the Hawaiian Islands, and there seems concentrated in Kauai, the northernmost of the group. The influence of this type in derivative forms, may be traced in most of the other marginal groups in the east and south of Polynesia, but, on the basis of our very scanty data from Tonga and Samoa, seems to be absent in the west.

Second in historical sequence probably, is the Dolichocephalic, Hypsicephalic, Platyrrhine type, whose proximate affiliations lie with the negroid population of Melanesia and Australia. That some element of Melanesian character had entered into the Polynesian complex has long been recognized but has usually been ex-

plained as due to the absorption of a certain amount of Melanesian blood by the Polynesian ancestors, in the course of their migration through or along the margin of Melanesia. The geographic distribution of crania of this type, as shown by the present study, seems to show this view to be practically untenable, and to lead to the conclusion that a stratum of relatively pure Austro-Melanesian type must have preceded the "Polynesians" in Polynesia. For like the Negrito type, this also is marginal in its occurrence, and while the Negrito type survives most strongly in Hawaii in the north, this appears in greatest strength in Easter Is. on the eastern margin of the area. It makes its influence felt in the northern islands of the Hawaiian group, in the Marquesas and Central Polynesia, and plays a notable part in New Zealand. Here, there is interesting evidence to show that one of its most common derivatives, very numerous throughout Melanesia, has played a double rôle, entering into the composition of the Maori people not only at an early date, but reappearing again much later as a relatively recent factor in the make-up of that extremely complex people.

The third and historically clearly the latest type which has contributed to the making of the Polynesian people, and the one whose influence has for long been preponderant over a large part of the area, is one which is Brachycephalic, Hysicephalic and Leptorrhine. This type is one which forms a very important factor in the rather complex Malayan and Eastern Asiatic populations, but for which I have not as yet found a wholly satisfactory name. In Polynesia; this type seems strongest in Samoa and Tonga in the west, and of great importance in the southern islands of the Hawaiian group, while it plays a considerable part in Central Polynesia and New Zealand. Curiously, little trace of it occurs in Easter Island to the east.

Although these three fundamental types and their derivatives or blends comprise the great majority of the Polynesian population, the indications of the presence of a small minority of a fourth fundamental type, must not be overlooked; for although it itself survives only in very small proportions, some of its derivatives are not unimportant in Hawaii and New Zealand. This is a Dolichocephalic,

Hypsicephalic, Leptorrhine type, whose affiliations may be said, for lack of a better term, to be distinctly Caucasian. Its marginal distribution in the north and south, leads to the conclusion that its position is early rather than late in the historical sequence, and there is much to suggest its appearance in company with the Austro-Melanesian stratum.

It must not be understood for a moment, that the present theory would claim that the various primitive and fundamental types came into Polynesia as pure types, and that all the manifold blends have originated only after arrival. On the contrary, much blending and crossing must have occurred before any of these types even entered the Oceanic area, and much more en route. Yet it is believed that the successive waves or streams although more or less complex in their make up before reaching Polynesia, nevertheless contained in each case a considerable core of pure types. In no other way can the relative abundance of such pure types in the extreme marginal portions of Polynesia, be easily accounted for.

It is in the highest degree unfortunate that we have practically no measurements or descriptive data in regard to the living population of this region. For we have in consequence no means of knowing whether skin color, hair and stature are more or less definitely correlated with the cranial types defined. That there were great differences in all of these three features, however, we know from the general accounts given by the earlier explorers, the presence in particular of distinctly negroid individuals being frequently mentioned. Such statements thus greatly strengthen and confirm the belief in the complexity of the racial origins of the Polynesian people.

In summary it may be said that the investigation made seems to show that the racial history of the Polynesian area is even more complex than it has hitherto been supposed to be. The underlying stratum here, as well as further westward, appears to be indistinguishable from the Negrito, although the problem of how it reached this remote region is not yet wholly clear. This stratum was followed by a wave of negroid peoples whose most numerous modern representatives in this portion of the world form the bulk of

the population of Melanesia and Australia. As a result of this influx, the earlier Negrito type was largely absorbed, and survives today as such, only in remote marginal areas into which it was driven by the negroid immigrants. Following the negroid came the Malayoid or Mongoloid wave, which, spreading over the area, absorbed and apparently quite submerged the preceding types and blends in western Polynesia, and flooded in force into the central, southern and northern portions, so that the Austro-Melanesian or negroid type and its predecessor were left in any degree intact, only in the marginal areas. These successive waves must not, however, be thought of as rapid conquests, but rather, for the most part, as slow drifts requiring generations or centuries for their completion, with periods of halting, and as following moreover somewhat different paths.

For much of the Polynesian area, the available data are extremely scanty, and conclusions must therefore be regarded as only tentative. It is encouraging to learn that much fuller materials are probably soon to be made accessible, as a result of the expeditions to be sent out by the Bishop Museum in Honolulu beginning this present summer. An analysis of this expected large body of material, on the plan here followed will, it is believed, confirm and greatly amplify the general conclusions reached.

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